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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,478

09/16/2003

Sung-Bin Hong

44892

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01/25/2008

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EXAMINER

GEBRIEL, SELAM T

ART UNIT

PAPER NUMBER

4178

MAIL DATE

DELIVERY MODE

01/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/662,478	Applicant(s) HONG, SUNG-BIN	
	Examiner SELAM T. GEBRIEL	Art Unit 4178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/20/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claim 5 is objected to because of the following informalities: Claim 5 line 5 the word “**Durign**” should be changed to -- **During** -- .

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 – 10 are rejected under 35 U.S.C. 102 (b) as being anticipated by Takayama Et al. (US 6,683,643 B1).
5. Claim 1, Takayama discloses a charge coupled device (CCD) camera (Figure 1) that compensates for defective CCDs, comprising

A shutter (Figure 1, Element 12), adapted to adjust incident light for a specific amount of time;

A shutter driving unit (Figure 1, Element 8), adapted to drive the shutter (Col 11, Line 53 - 58);

A CCD module (Figure 1, Element 1), comprising a plurality of CCDs that are adapted to output electric signals based on an amount of light incident through the shutter;

A memory (Figure 1, Element 5), adapted to store electric signals provided by the respective CCDs transmitted from the CCD module; and

A control unit (Figure 1, Element 8), adapted to perform the following operations:
control the shutter driving unit to periodically drive the shutter;

Sequentially storing in the memory photo-electrically converted signals with respect to the individual CCDs of the CCD module (Col 11, Line 11 – 15, It is well know to sequentially store photo-electrically converted signals);

Comparing the respective CCD signals stored in the memory to a preset CCD defect threshold level to detect location information of CCDs that output signals larger than the CCD defect threshold level (Abstract); and

Replacing each of the respective signals from the CCDs that output signals larger than the CCD defect threshold level with a respective average signal representing an average of the signals output by the CCDs adjacent to the respective CCDs that output the larger signals based on the location information (Abstract).

6. Claim 2, Takayama discloses the CCD camera according to claim 1, wherein the control unit is adapted to control the shutter driving unit to operate the shutter at a low speed (Col 16 – 38 and Col 16, Line 45 – 50).

7. Claim 3, Takayama discloses the CCD camera according to claim 1, wherein the control unit is adapted to control the shutter driving unit to operate the shutter at a low speed in a predetermined interval based on a vertical period of the CCD data (Col 16, Line 33 - 50).

8. Claim 4, Takayama discloses the CCD camera according to claim 1, wherein the control unit is adapted to control the shutter driving unit to alternately operate the shutter in odd fields and even fields of the CCDs at the low speed (Col 16, Line 45 – 50).

9. Claim 5, Takayama discloses the CCD camera according to claim 1, wherein:
During the comparing operation, the control unit amplifies the electric signals of the individual CCDs read out of the memory to a certain level and compares the amplified electric signals to the CCD defect threshold level (Col 6, Line 39 – 59);

During the comparing operation, the control unit compares the electric signals of the individual CCDs to the CCD defect threshold level (Col 6, Line 39 – 59); and

During the replacing operation, the control unit arranges and stores in a second region of the memory at a descending order of signal values the location information

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relating to the CCDs having electric signals larger than the CCD defect threshold level (Col 6, Line 39 – 59).

10. Claim 6, Takayama discloses the CCD camera according to claim 1 further comprising:

A second memory (Rewritable memory), adapted to store the location information of defective CCDs, wherein during the comparing operation, the control unit compares the electric signals of the individual CCDs to the CCD defect threshold level, and during the replaying operation the control unit arranges and stores in the second memory at a descending order of signal values the location information relating to the CCDs having electric signals larger than the CCD defect threshold level (Col 6, Line 39 – 59).

11. Claim 7, Takayama discloses a method for controlling a CCD camera to correct for defective CCDs, comprising:

Exposing CCDs periodically to light for a predetermined amount of time (Col 10, 62 – 67);

Sequentially storing electric signals of individual CCDs based on the exposure (Col 11, Line 11 – 15, It is well know to sequentially store photo-electrically converted signals);

Sequentially reading out the stored electric signals of the individual CCDs (Col 6,

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Line 39 – 59);

Comparing the electric signals to a preset CCD defect threshold level (Col 6, Line 39 – 59);

Storing location information relating to CCDs having electric signals larger than the CCD defect threshold level as a result of the comparison (Col 6, Line 39 – 59); and

Replacing each of the individual signals from the CCDs for which the location information is stored, with an average signal (mean value, abstract) representing an average of the signals output by the CCDs adjacent to the individual CCDs based on the location information (Col 6, Line 39 – 59).

12. Claim 8, Takayama discloses the method according to claim 7, wherein the step of comparing comprises:

Amplifying the electric signals of the individual CCDs (Col 6, Line 39 – 59); and

Comparing the amplified electric signals of the CCDs to the CCD defect threshold level (Col 6, Line 39 – 59).

13. Claim 9, Takayama discloses the method according to claim 7, further comprising:

Arranging in a descending order of signal values the location information relating to the CCDs having electric signals larger than the CCD defect threshold level, after comparing the electric signals of the individual CCD devices to the CCD defect threshold level (Col 6, Line 39 – 59).

14. Claim 10, Takayama discloses the method according to claim 9, wherein:

The storing step comprises storing the arranged signal values arranged in the arranging step (Col 11, Line 11 – 15, It is well know to sequentially store photo-electrically converted signals).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SELAM T. GEBRIEL whose telephone number is (571)270-1652. The examiner can normally be reached on Monday-Thursday 7.30am-5.00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai Tran can be reached on 571-272-7305. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Selam Gebriel
Wednesday, January 02, 2008

/Hai Tran/
Supervisory Patent Examiner, Art Unit 4178